

Natural & Historic Resources  
Bureau of Coastal Engineering

M E M O R A N D U M

TO: David Rosenblatt, Administrator

FROM: John Garofalo, Manager

DATE: September 12, 2006

SUBJECT: Coastal Storm Survey & Damage Assessment  
Impacts from September 12, 2006 – Hurricane Florence

SUMMARY:

The erosion caused by the effects from Tropical Storm Ernesto over the Labor Day weekend left several areas along the New Jersey Coast vulnerable to future episodes of large surf. This was the case within a week of Ernesto affecting the New Jersey coast; as Ernesto was winding down, Florence was beginning to form in the Central Atlantic.

Hurricane Florence started as a Tropical Depression on August 3, 2006 in the Central Atlantic and became a hurricane by September 10, 2006 several hundred miles north of Puerto Rico. While Florence took a path that kept her away from the United States East Coast, the size of the storm and the path the storm took sent large powerful swells with an average height in the 8 to 10 foot range towards Mid-Atlantic and the Northeast coasts. This translated into waves ranging from 4 to 8 feet along the coast of New Jersey.

The Bureau of Coastal Engineering conducted a survey of the New Jersey coastline on Tuesday, September 12, 2006, the results of which are included as part of this report.

**Areas of Attention:**

In absence of any shoreline protection, Ocean County beaches and dune systems have lost any sand that has accreted over the summer months and are now vulnerable to future storm damage.

**Emergency Repairs Needed:**

None at this time.

**Follow-up Inspections:**

Additional follow-up inspections will be conducted on an as-needed basis.

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<b>Perth Amboy</b>	No erosion reported. No damage reported.
<b>South Amboy</b>	No erosion reported. No damage reported.
<b>Old Bridge</b>	A vertical cut (scarp) 3' to 4' high by 50' to 75' wide was reported. No damage reported.
<b>Cliffwood Beach</b>	A gentle sloping cut 1' to 2' high by 100' - 150' wide was reported. No damage reported.
<b>Keyport</b>	No erosion reported. No damage reported.
<b>Union Beach</b>	No erosion reported. No damage reported.
<b>Keansburg</b>	A vertical cut (scarp) 1' to 2' high by 75' to 100' wide was reported. 1' cut in dunes reported.
<b>Bayshore Floodgate</b>	No erosion reported. No damage reported.
<b>Port Monmouth</b>	A vertical cut (scarp) 1' to 2' high by 75' to 100' wide was reported. 8' cut in dune receded 5'
<b>Belford</b>	No erosion reported. No damage reported.
<b>Leonardo</b>	No erosion reported. No damage reported.
<b>Atlantic Highlands</b>	No erosion reported. No damage reported.
<b>Highlands</b>	No erosion reported. No damage reported.
<b>Sea Bright</b>	A vertical sloping cut 2' to 3' high by 75' to 100' wide was reported. 3' to 5' cut in dune at Donovan's Reef and Village Way
<b>Monmouth Beach</b>	A vertical sloping cut 1' to 2' high by 100' - 150' wide was reported. 2' to 5' cut in dune
<b>Long Branch</b>	A vertical sloping cut 1' to 2' high by 100' - 150' wide was reported. No damage reported.
<b>Elberon</b>	A gentle sloping cut 1' to 2' high by exceeding 150' wide was reported. No damage reported.

<b>Allenhurst</b>	No erosion reported. No damage reported.
<b>Deal</b>	A gentle sloping cut 1' to 2' high by exceeding 150' wide was reported. No damage reported.
<b>Loch Arbour</b>	A gentle sloping cut 1' to 2' high by exceeding 150' wide was reported. No damage reported.
<b>Asbury Park</b>	A gentle sloping cut 2' to 3' high by 25' - 50' wide was reported. No damage reported.
<b>Ocean Grove</b>	A gentle sloping cut 2' to 3' high by 25' - 50' wide was reported. No damage reported.
<b>Bradley Beach</b>	A gentle sloping cut 2' to 3' high by 25' - 50' wide was reported. No damage reported.
<b>Avon by the Sea</b>	A gentle sloping cut 2' to 3' high by 25' - 50' wide was reported. No damage reported.
<b>Belmar</b>	A gentle sloping cut 2' to 3' high by 25' - 50' wide was reported. No damage reported.
<b>Spring Lake</b>	A gentle sloping cut 3' to 4' high by 25' - 50' wide was reported. No damage reported.
<b>Sea Girt</b>	A gentle sloping cut 3' to 4' high by 25' - 50' wide was reported. No damage reported.
<b>Manasquan</b>	A gentle sloping cut 3' to 4' high by 25' - 50' wide was reported. No damage reported.
<b>Point Pleasant</b>	No erosion reported. No damage reported.
<b>Bay Head</b>	No erosion reported. No damage reported.
<b>Mantoloking</b>	No erosion reported. No damage reported.
<b>Lavallette</b>	No erosion reported. No damage reported.
<b>Bricktown</b>	No erosion reported. No damage reported.
<b>Ortley Beach</b>	No erosion reported. No damage reported.

<b>Seaside Heights</b>	No erosion reported. No damage reported.
<b>Seaside Park</b>	No erosion reported. No damage reported.
<b>Island Beach State Park</b>	No erosion reported. No damage reported.
<b>Barnegat Light</b>	A gentle sloping cut 2' to 3' high by 25' - 50' wide was reported. No damage reported.
<b>Loveladies</b>	A vertical sloping cut 3' to 4' high by 50' to 75' wide was reported. No damage reported.
<b>Harvey Cedars</b>	A vertical sloping cut 3' to 4' high by 50' to 75' wide was reported. No damage reported.
<b>North Beach</b>	A vertical sloping cut 2' to 3' high by 50' to 75' wide was reported. No damage reported.
<b>Surf City</b>	A gentle sloping cut 2' to 3' high by 25' - 50' wide was reported. No damage reported.
<b>Ship Bottom</b>	A gentle sloping cut 2' to 3' high by 25' - 50' wide was reported. No damage reported.
<b>Long Beach Township</b>	A vertical sloping cut 2' to 3' high by 25' - 50' wide was reported. No damage reported.
<b>Brant Beach</b>	A vertical sloping cut 2' to 3' high by 25' - 50' wide was reported. No damage reported.
<b>Beach Haven</b>	A vertical sloping cut 2' to 3' high by 25' - 50' wide was reported. No damage reported.
<b>Brigantine</b>	A gentle sloping cut 1' to 2' high by 50' to 75' wide was reported. No damage reported.
<b>Atlantic City</b>	A vertical sloping cut 1' to 2' high by exceeding 150' wide was reported. No damage reported.
<b>Ventnor</b>	A gentle sloping cut 1' to 2' high by exceeding 150' wide was reported. No damage reported.
<b>Margate</b>	A gentle sloping cut 2' to 3' high by exceeding 150' wide was reported. No damage reported.
<b>Longport</b>	A gentle sloping cut 2' to 3' high by exceeding 150' wide was reported. No damage reported.

<b>Ocean City</b>	A gentle sloping cut 1' to 2' high by exceeding 150' wide was reported. Outfall pipe fully exposed. Access road to outfall pipe cut back.
<b>Strathmere</b>	A gentle sloping cut 1' to 2' high by exceeding 150' wide was reported. 3' x 3' vert. cut in the dune was reported. Timber groin exposed.
<b>Whale Beach</b>	A gentle sloping cut 1' to 2' high by exceeding 150' wide was reported. Additional foot of erosion from the top of the geotubes.
<b>Sea Isle City</b>	A vertical cut (scarp) 3' to 4' high by exceeding 150' wide was reported. Jetty exposed at bridge.
<b>Avalon</b>	A vertical cut (scarp) 2' to 3' high by 75' to 100' wide was reported. Bottom of rock revet. showing from 15th-9th Ave.
<b>Stone Harbor</b>	A gentle sloping cut 1' to 2' high by 75' to 100' wide was reported. No damage reported.
<b>North Wildwood</b>	A gentle sloping cut 1' to 2' high by 100' - 150' wide was reported. Windblown sand reported.
<b>Wildwood Crest</b>	A gentle sloping cut 1' to 2' high by 50' to 75' wide was reported. No damage reported.
<b>Wildwood</b>	A gentle sloping cut 1' to 2' high by 75' to 100' wide was reported. high tide flooding was reported
<b>Cape May City</b>	A gentle sloping cut 1' to 2' high by less than 25' wide was reported. No damage reported.
<b>Cape May Point State Park</b>	A vertical sloping cut 1' to 2' high by less than 25' wide was reported. 2' x 80' cut in dune reported.
<b>Cape May Point Borough</b>	A vertical cut (scarp) 1' to 2' high by exceeding 150' wide was reported. No damage reported.
<b>Delaware Bay Area</b>	No erosion reported. overwashing of roads reported